DHSS Defense Health Services Systems

Medical Logistics Supporting the Warfighter: Evolution to a Net-Centric Environment

April 2009

Christopher J. Harrington, COL, MS
Deputy Program Manager - Medical Logistics
Defense Health Services Systems (DHSS)

Purpose

- The change from Military Treatment Facility (MTF) Centric to Enterprise-Wide Management of Medical Logistics extends transaction-based information management to collaboration-based information management
- Defense Medical Logistics Standard Support (DMLSS) will extend information driving the supply chain forward to point of care and outward to commercial partners
- Effective medical supply chain management is not focused on a single unit of action but on the entire theater framework of all the deployed units and on managing the medical materiel and equipment requirements of the battlefield

Agenda

- Introduction to Defense Medical Logistics
- Overview of the DMLSS Family of Systems
- Overview of Theater Class VIII Distribution
- Moving to Net-Centric Service Oriented Architecture (SOA)
- Summary

DML Functions

- A fully integrated system of support
  - Medical supply chain management
  - Acquisition and total life cycle management of medical equipment and assemblages
  - Medical equipment maintenance and repair
  - Fabrication and repair of optical products
  - Storage and distribution of blood and blood products
  - Life cycle management of medical facilities and real property
  - Medical contracting and services
- Business processes and systems support both operational and institutional environments

Medical Commodity

- Medical logistics is managed within the MHS using dedicated medical information systems due to requirements
  - Used exclusively for Health Service Support (HSS)
  - Driven by healthcare activity, rather than end-items, weapons systems or troop population
  - Difficult to predict but require rapid response
  - Met through materiel that is predominantly commercial and non-standard (non-National Stock Number (NSN)
  - Subject to rapid change in technology and standard of care
  - Business processes that enable direct ordering and delivery from industry to medical logistics elements of the MHS
  - Critical to outcome of Joint Force Health Protection and casualty care
- Business processes and enabling systems are predominantly Joint
- The physical transportation of medical materiel is accomplished through interface with distribution capabilities managed outside MHS

Medical Logistics System Landscape

Enterprise Business System (EBS)
and DMLSS-Wholesale applications
- *Contracts*
- *Vendor Pay*
- *Product Data*
- *Business Intelligence*
- *Interagency Coordination*

National-Level

- *Total Asset Visibility for Class VIIIa and Class VIIIb*

Operational-Level

CONUS Installation

- MTF Support

DMLSS 3.0

All Services

- Army Support to mobilization & deployment

DMLSS 3.0

TEWLS

Service-level

- Life cycle management of medical assemblage
- Assemblage production
- Materiel standardization
- Contingency requirements forecasting and management

TEWLS (Army)

DMLSS 3.0

Air Force
Navy
Marine

OCONUS

- Theater medical supply chain management

TAMMIS

FY 09

TEWLS

- MTF Support

DMLSS 3.0

Army
Air Force
Navy

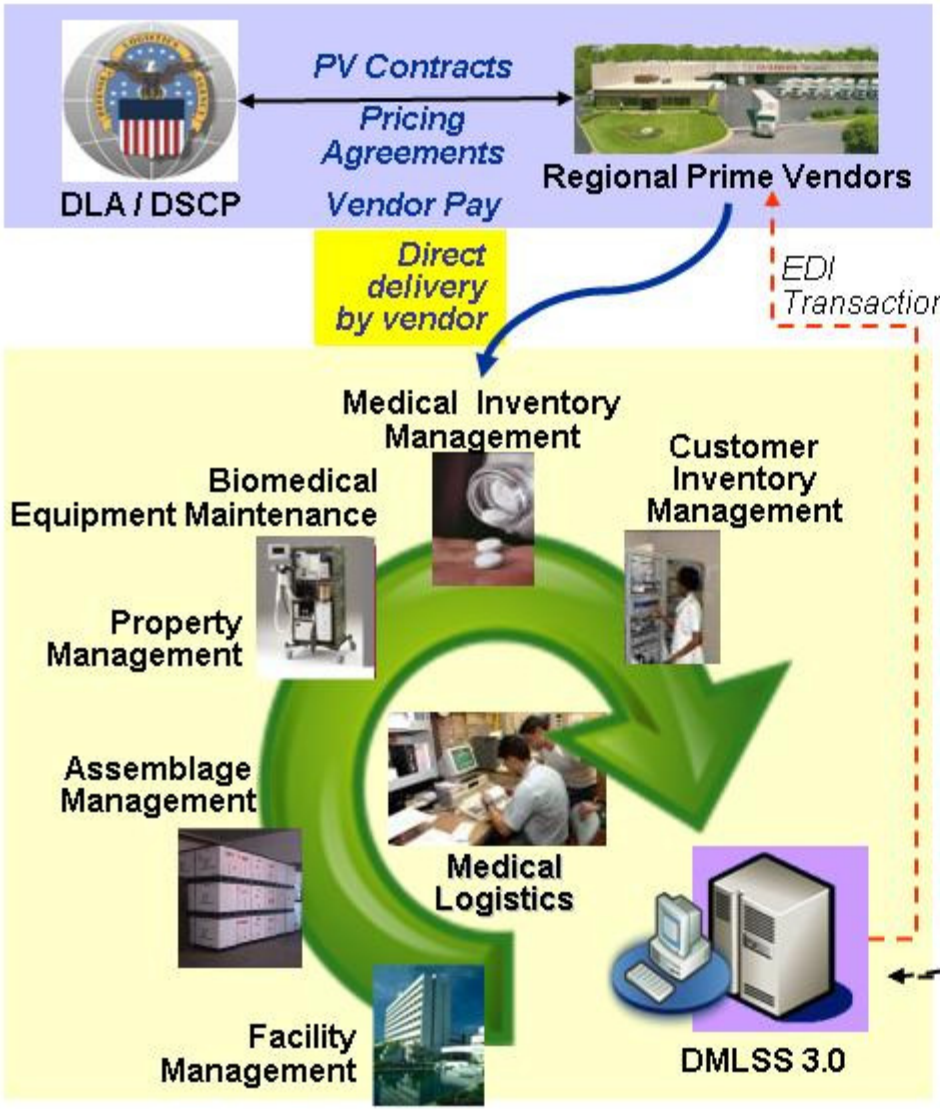
- Tactical Units

DCAM

All Services

TEWLS = Theater Enterprise Wide Logistics System (TEWLS)

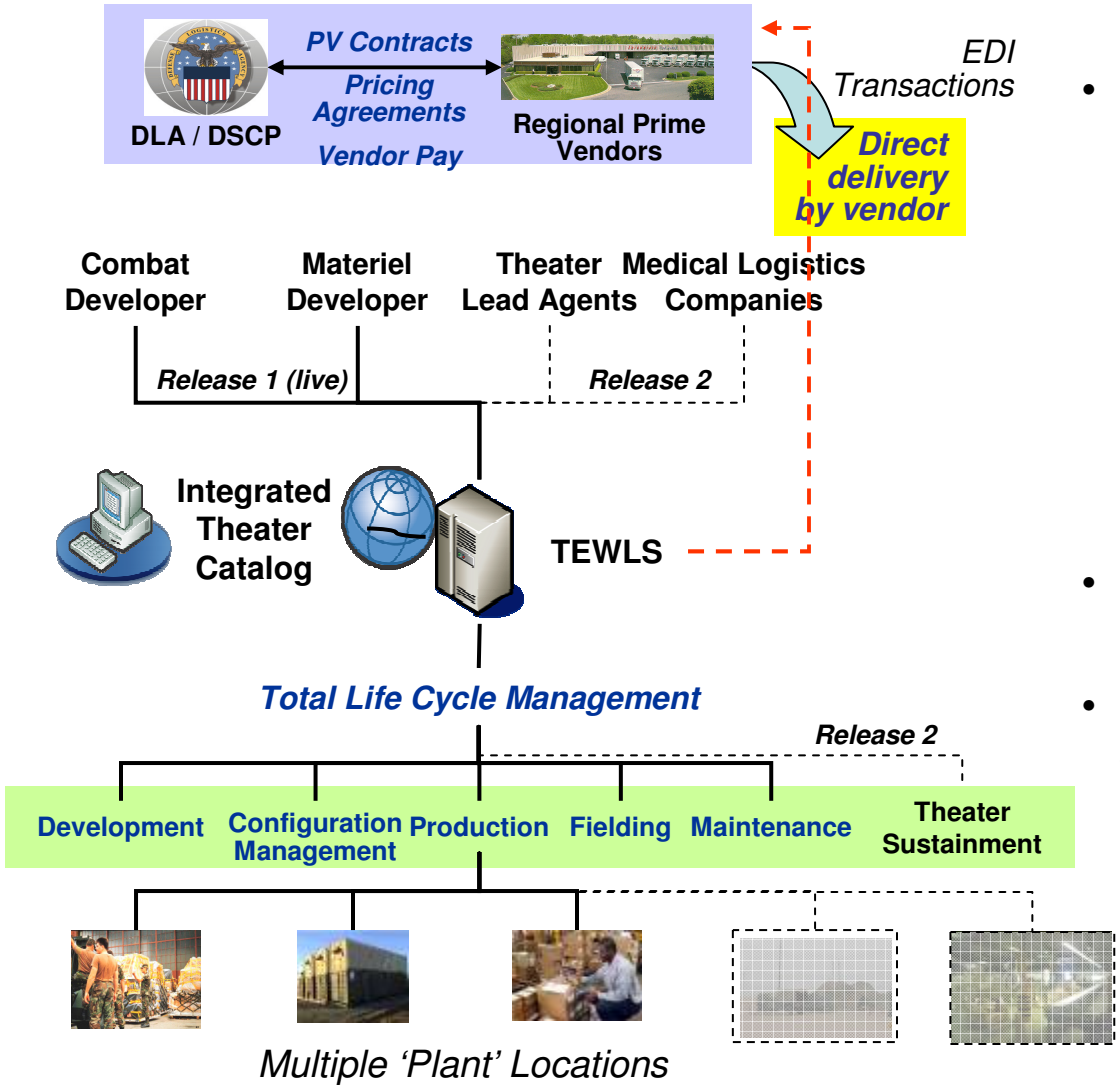
DMLSS Business Model
Support to Medical Treatment Facility (MTF)



- Integrated Client-Server application (DMLSS Release 3)
  - All DoD MTFs worldwide
  - War Reserve Materiel (WRM) sites
- Order / receive directly from:
  - Regional Prime Vendors
  - Web-based Orders (ECAT)
  - Multiple local vendors
  - TLAMM* or DLA^ Depot
- CONUS order fulfillment cycle = 24 hours (PV)**
- Average MTF inventory < 5 days
- 10-year ROI (2002-2012) = $3.9B

*** TLAMM: Theater Lead Agent for Medical Materiel** ****Prime Vendor**
^Defense Logistics Agency

Theater Support Model
Strategic Medical Supply Chain



- Fill the Distribution Mission accomplished by Prime Vendors in CONUS
- Extending capability of SAP-based ERP (MySAP) Army initiative Theater Enterprise Wide Logistics System (TEWLS) to replace TAMMIS
  - Release 1.2 ('live') – provides single application/database for Total Life Cycle Management (TLCM) of all Army medical assemblages
  - Rel 2 (FY10) – will extend solution to theater supply chain management
- Uses DLA / DMLSS acquisition programs (PV, ECAT)
- Completes transition to DMLSS Portfolio at Release 2 (FY10)
  - Milestone Decision Authority/Program Executive Officer resides with US Army Medical Research and Materiel Command
  - Will serve as solution for theater medical supply chain management

Theater Lead Agent for Medical Materiel (TLAMM)

Theater medical logistics organizations have been formally incorporated into DLA's distribution architecture.

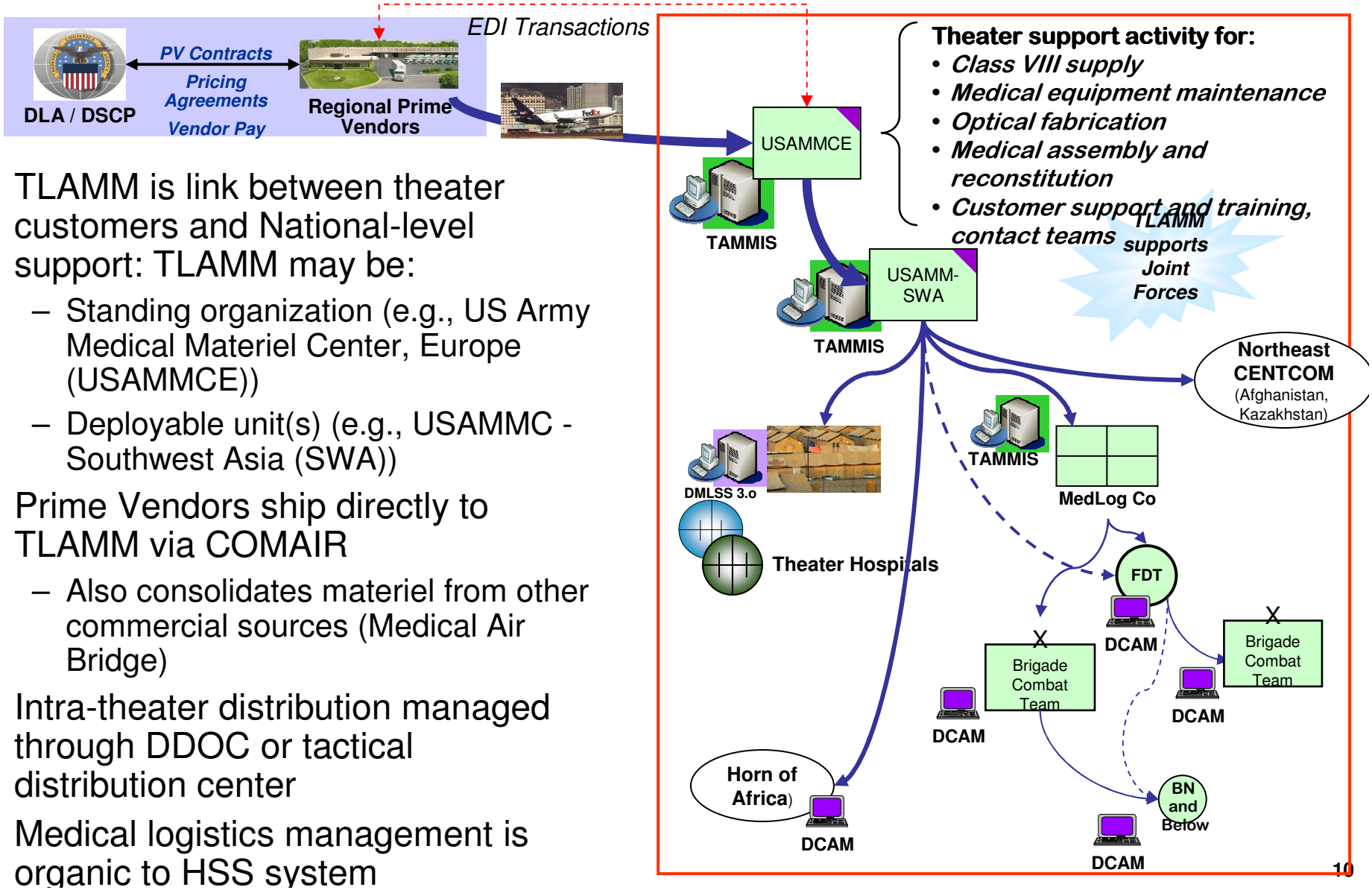
- Chairman of the Joint Chiefs of Staff (CJCS) has designated Service medical logistics organizations provide theater support to European Command (EUCOM), Central Command (CENTCOM), US Forces Korea (USFK), Northern Command (NORTHCOM), and Southern Command (SOUTHCOM)
- Provides single point of contact for theater-level medical logistics
- Coordinates with Deployment and Distribution Operations Center (DDOC) and other movement control for intra-theater distribution management

Single POC for theater medical logistics support

- Class VIII supply
- Medical equipment maintenance
- Optical fabrication
- Medical assembly and reconstitution
- Customer support and training, contact teams

CENTCOM and EUCOM TLAMM Support – *Current Annual Workload* (USAMMC-SWA and USAMMCE)	
Class VIII Supply	780K requests/$450M
Medical Equipment Maintenance	11K work orders
Optical Fabrication	115K spectacles produced

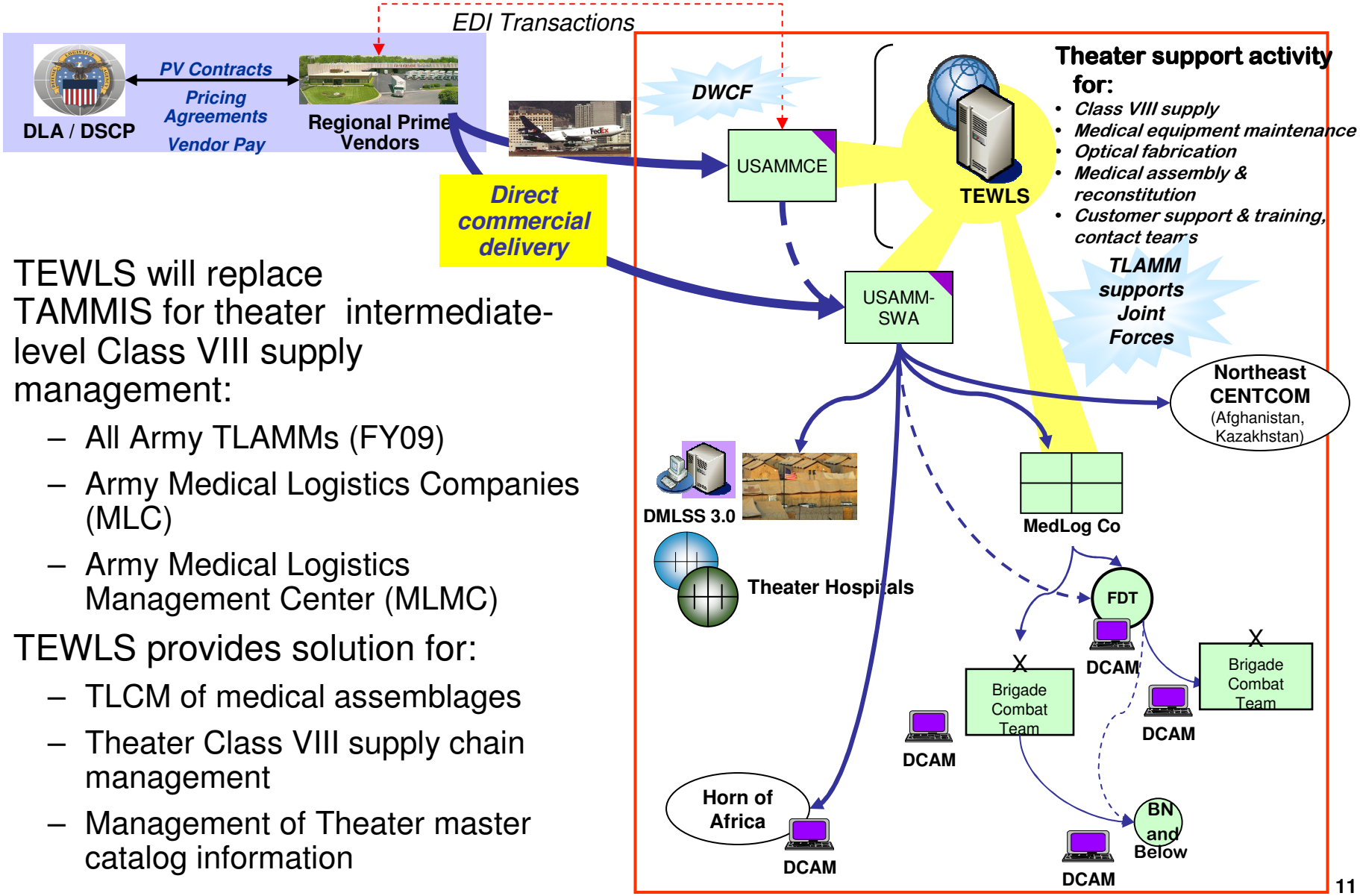
Theater Medical Logistics (CENTCOM current)



- TLAMM is link between theater customers and National-level support: TLAMM may be:
  - Standing organization (e.g., US Army Medical Materiel Center, Europe (USAMMCE))
  - Deployable unit(s) (e.g., USAMMC - Southwest Asia (SWA))
- Prime Vendors ship directly to TLAMM via COMAIR
  - Also consolidates materiel from other commercial sources (Medical Air Bridge)
- Intra-theater distribution managed through DDOC or tactical distribution center
- Medical logistics management is organic to HSS system

Theater Medical Logistics (TEWLS)

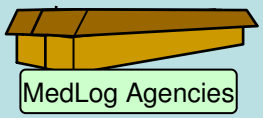
- TEWLS will replace TAMMIS for theater intermediate-level Class VIII supply management:
  - All Army TLAMMs (FY09)
  - Army Medical Logistics Companies (MLC)
  - Army Medical Logistics Management Center (MLMC)
- TEWLS provides solution for:
  - TLCM of medical assemblages
  - Theater Class VIII supply chain management
  - Management of Theater master catalog information



Characteristics of a Net-Centric Global Information Grid (GIG) Framework

- There is no center of the universe
- What GRIDs do
  - Facilitate data and capability sharing in a secure manner
  - Avoid point-to-point connectivity and standardize security
  - Improve reuse of service-based customizations
  - Reduce total cost of ownership by maximizing reuse
  - Avoid single points of failure prevalent with centralized systems
  - Offer a cost effective transition to industry best practices without interruption of service
- GRIDs requirements
  - Integrate best-of-breed capabilities using interoperability standards
  - Each node on the GRID must offer two things
    - **Capabilities – Functional capabilities to the end user, via a thin client or a Web-based set of screens**
    - **Services – Net-centric Web services to allow other systems to access functional capabilities**

Capabilities and Services Offered in the DML GRID



Central Functions

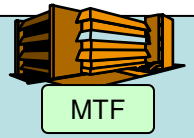
CAPABILITIES
+ Master Data Management
+ Assemblage Building
+ Assemblage Maintenance
= Combat Developer Planning
= Standardization
+ Business Intelligence

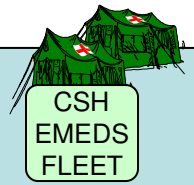
SERVICES
Receive MDM Updates
Receive BI Updates

Theater Distribution

CAPABILITIES
+ Ordering
+ Inventory Management
+ Warehouse Management
+ Distribution Management

SERVICES
Receive Catalog Updates
Receive Materiel Requisition





Resuscitative/Theater/Definitive Care

CAPABILITIES
+ POU Inventory Management
+ POU Systems Support
= Supply Order
= Asset Management
= Equipment Tracking
+ Transportation Information
= Hospital Inventory Management
+ Facilities Management
= Equipment Repair
= Add Catalog Items
= New Item Requests

SERVICES
Receive Catalog Updates
Receive Supply Order
Provide Order Status
Receive Tracking Updates
Receive Inventory Updates
POU Integration Service

First Responder

CAPABILITIES
= Supply Order
= Order Status
+ Inventory Mgmt
+ Add New Items

SERVICES
None

Red is COTS
Black is GOTS
+ is New/Improved Capability
= is Existing Capability

Services are published on the GRID

Quick win opportunities to begin building the DML GRID

Service Oriented Architecture (SOA) Stack:
Business Process Execution Language (BPEL)
Messaging
Universal Description Discovery and Integration (UDDI)

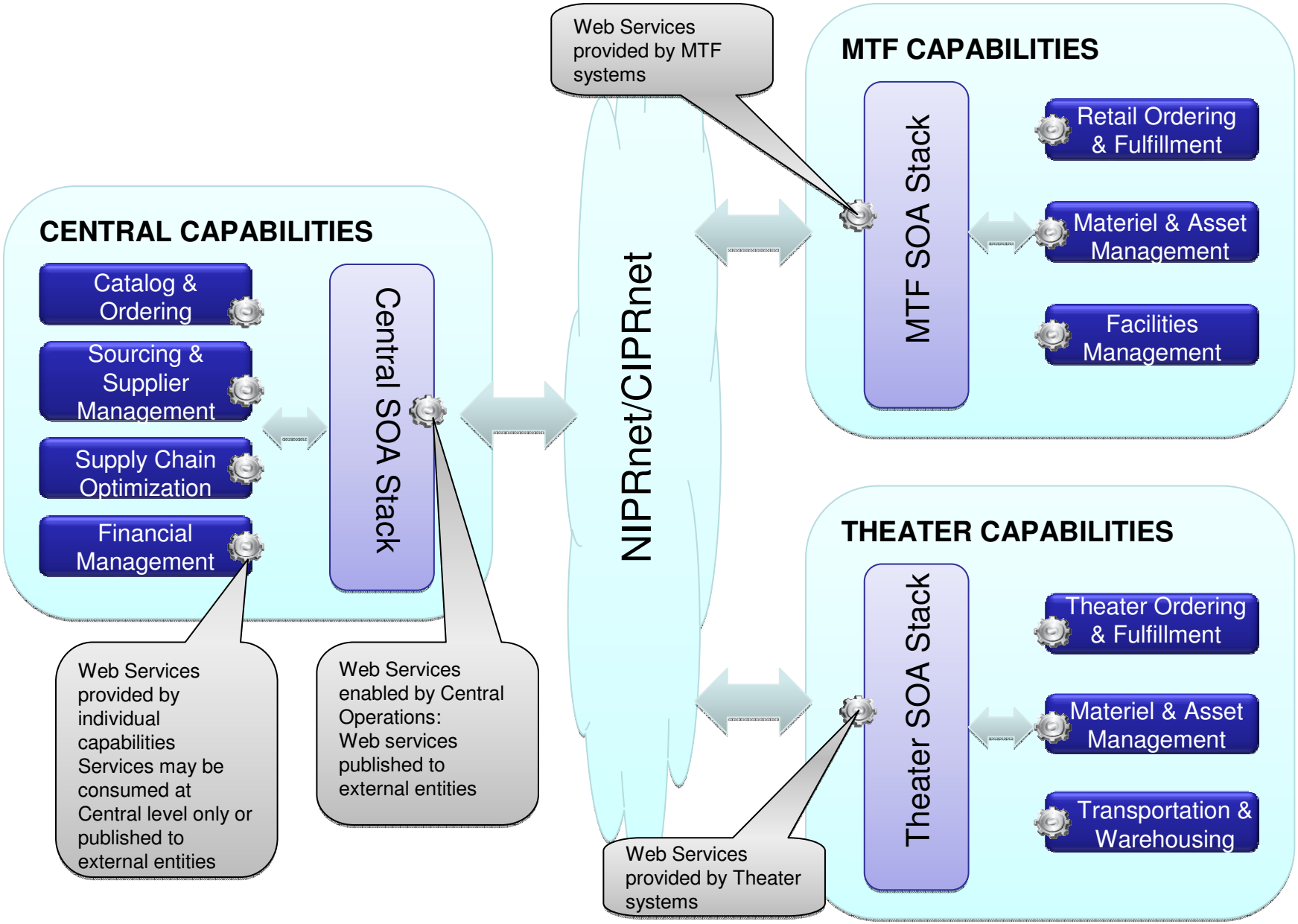
GRID

Maintain continuity of business operations during disconnected mode, within each segment

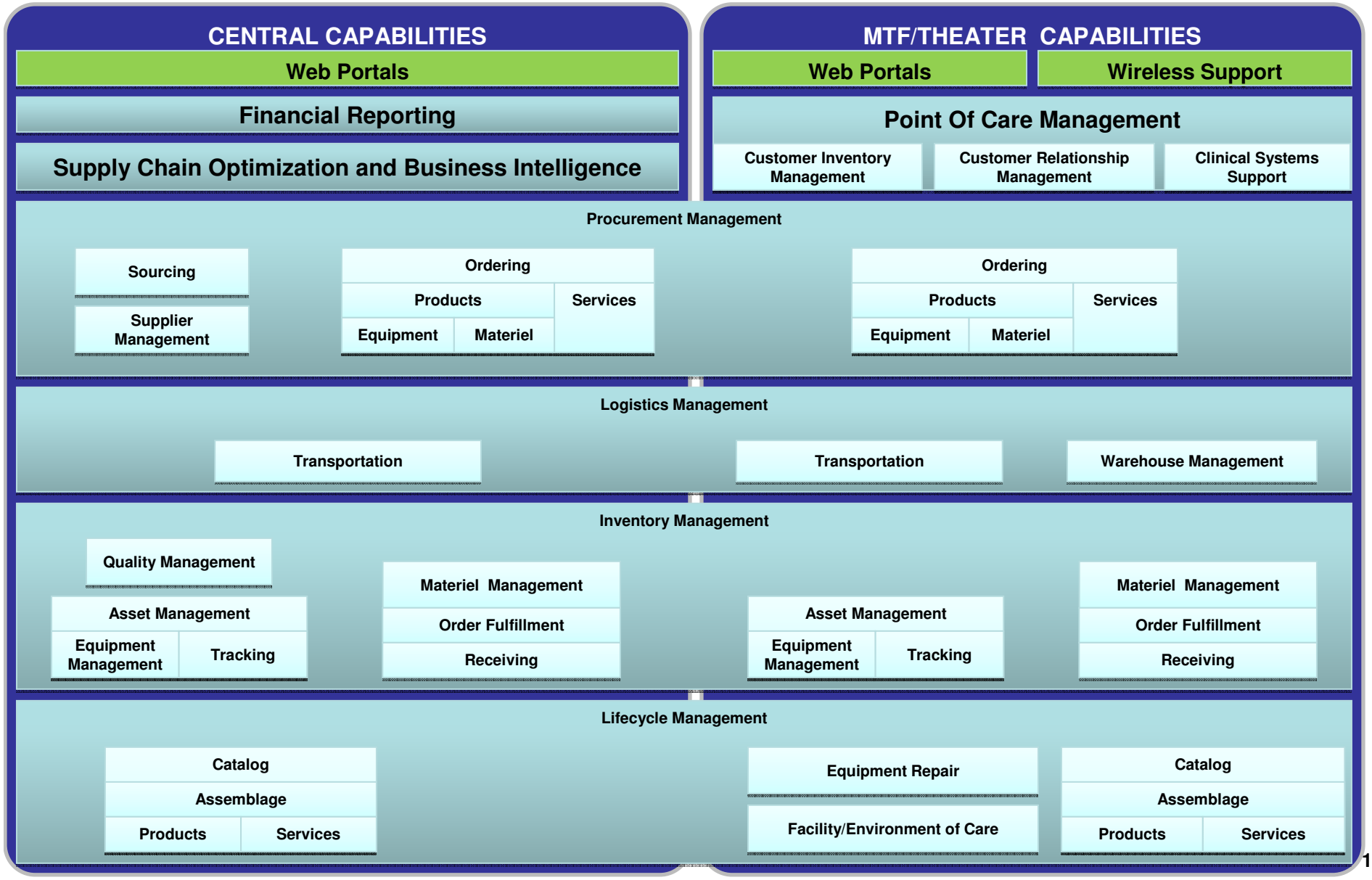
Four Steps To Achieve a Net-Centric DML Family of Systems

- STEP 1 – Develop a Web services matrix outlining the services offered at the central, MTF and theater locations
- STEP 2 – Extend current capabilities using best fit technologies to offer Web services as per the matrix
- STEP 3 – Determine the SOA integration platform to provide interoperability and secure orchestration for Web services
- STEP 4 – Deploy business process orchestration modules to appropriate SOA stacks to integrate the Web services across the enterprise

DML Enterprise Services Matrix



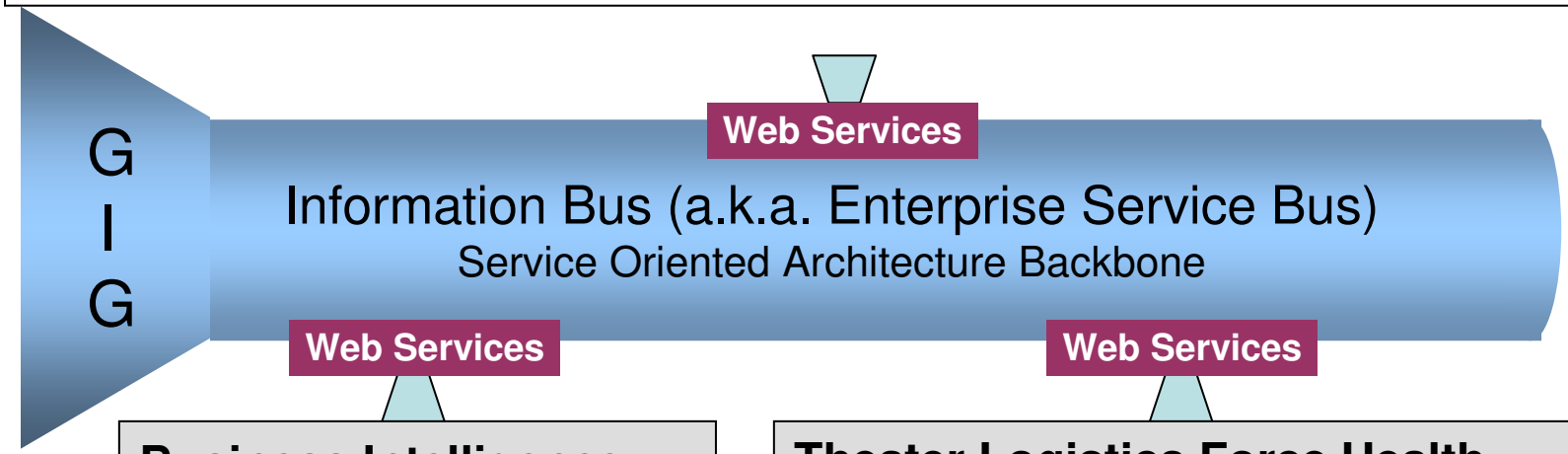
Geographical Distribution of DMLSS Capabilities



DML Enterprise Wide Logistics Net-Centric Approach

Evidence Based Medical Logistics Support

- Extending the supply chain and medical logistics data
- Link to clinical systems
- Transforms Release 3 functionality to Enterprise Level Service Oriented Architecture
- Integrated Authoritative Medical Logistics Data Management
- Common Reference Data
- Product ID/Product Attributes/Federal Pricing/Link to Classification Schemes



Business Intelligence

- Command and Control
- Knowledge Management
- Medical Logistics Decision Support for War and Peace

Theater Logistics Force Health Protection

- Enhancement and Integration of TEWLS
- Evolution of DCAM
- Evolution of PMITS

GIG – Global Information Grid

Summary

- Medical logistics is part of a fully integrated Health Service Support system of systems
- Medical logistics systems are part of the MHS information architecture
- Medical logistics systems interface with DoD standard systems for transportation management and in-transit visibility
- The Army will field an enterprise solution for theater medical supply chain management (TEWLS, FY09)
- The DMLSS Family of systems will migrate to an Enterprise Wide Logistics architecture by 2012